

AMENDMENTS MADE UNDER ARTICLE 34

"FLOORING ELEMENT FOR A MODULAR FLOOR, MODULAR FLOOR OBTAINED WITH IT AND METHOD FOR ASSEMBLING SAID MODULAR FLOOR"

Field of the invention

The present invention relates to a flooring element for in order to compose modular floors, particularly adapted for building trade fair-, playground- or gymnasium floors and other walk surfaces for sport uses or subject to strong tangential stresses during their use.

Background art

The floors of buildings such as gymnasias and playgrounds quite often undergo remarkable tangential stresses applied by the users of the playground or the gymnasium, especially if sports such as volleyball, five-a-side football or basketball are practised on them. For example the tangential stresses may be considered, which are applied to the floor by a five-a-side football- or squash player, which suddenly stops and changes direction during running. It is currently known making such floors with a continuous covering made up of only one piece of synthetic material, or of one sheet extending on the whole area of the playground- or gymnasium floor. If on the contrary one wants to make a playground- or gymnasium floor by mechanically assembling several elements of a modular covering, possibly without using chemical fastening systems such as glues or cements, the presently known systems of floor tiles, panels or staves show in a greater extent the drawbacks caused by the aforesaid tangential stresses applied by the users: such tangential forces tend to disconnect the floor tiles, -staves or -panels, causing the whole floor being quickly and unwillingly dismantled.

On the other hand, requirements of floors for trade fair stands and pavilion are allowing to be installed quickly and easily, if possible with no need of being glued or cemented to the underlying concrete slab, and being strong enough for allowing the structure above of the stand or pavilion being anchored to them.

<1h> A first object of the present invention is supplying a modular floor that is particularly resistant to the stresses during the use - in particular to the tangential stresses applied to the walk plan- and that cannot be easily dismantled by such tangential stresses. A second object of the present invention is providing a modular floor that lend itself to be assembled quickly.

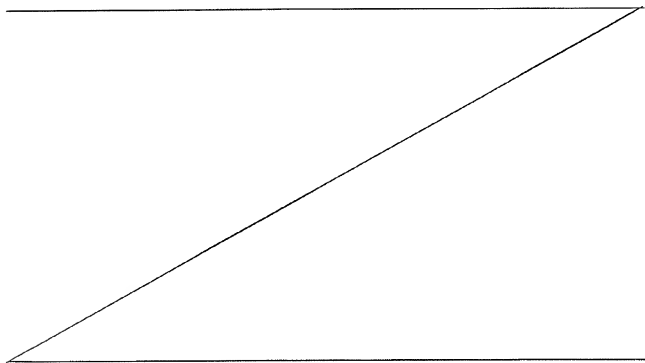
Summary of the invention

In a first aspect of the present invention, These objects are achieved with a flooring element having the features according to claim 1. to the appended claims.

In a second aspect of the present invention, the aforesaid second object is achieved with a flooring element having the features according to claim 13.

In a third aspect of the present invention, the aforesaid second object is achieved with a method

Known systems for assembling modular floors or similar flat structures are disclosed in the following documents. DE 199 40 837 discloses a flooring element equipped with fastening elements which prevent the flooring elements from being disconnected both in a direction normal to the plan of the panel elements and along a first longitudinal direction. EP 1 400 641 discloses a flooring element equipped with tongue and groove joints to prevent the flooring elements from being disconnected in directions normal to the plan of the panel elements and with fastening elements which prevent the flooring elements from being disconnected along a first longitudinal direction. GB 2 307 260 discloses a ground reinforcement panel equipped with male/female interlock members along the lateral sides which can be interengaged in a direction vertical to the plane of the panels. DE 102 53 553 discloses a flooring element equipped with tongue and groove joints to prevent the flooring elements from being disconnected in directions normal to the plan of the panel elements and with fastening elements which prevent the flooring elements from being disconnected along a first longitudinal direction. EP 1 816 283 discloses a parquet-type joining system comprising tongue and groove joints having projections and recesses associated thereto which consent the coupling between adjacent panels to be done according to a diagonal direction. WO 2006/113228 discloses a flooring joining system comprising tongue and groove joints (male prong and female cavity) which consent the coupling between adjacent panels to be done according to a combination of movements along perpendicular horizontal directions.



1A

~~for providing a self-levelling floor having the features according to claim 23;~~

~~In a fourth aspect of the present invention, the aforesaid second object is achieved with a method for handling flooring elements, having the features according to claim 24.~~

- The advantages attainable with the present invention will appear more evident, for a skilled person, from the following detailed description of some particular and non-limiting embodiments, given with reference to the following schematic figures.

List of Figures

- Figure 1 shows a perspective view of a flooring element according to a first embodiment of the present invention, seen from the side of the walk face;
- Figure 2 shows a bottom view of the flooring element of Figure 1;
- Figure 2A shows the bottom view of a detail of a hooking recess, arranged at the first fixing side of the flooring element of Figure 1;
- Figure 2B shows the perspective view of a detail of a hooking recess, arranged at the second fixing side of the flooring element of Figure 1;
- Figure 3 shows a bottom side of three flooring elements like the one of Figure 1, assembled together;
- Figure 4 shows, in a perspective exploded view, the details of a hooking bracket and a support spacer of the flooring element of Figure 1;
- Figure 4A shows an exploded view of the support spacer of Figure 4;
- Figure 5 shows a further perspective view of the flooring element of Figure 1;
- Figure 6 shows a perspective view of the three flooring elements of Figure 3, while being disassembled;
- Figure 7 shows, in perspective view, a hooking bracket of a flooring element according to a second embodiment of the present invention;
- Figure 8 shows, in perspective view, a hooking bracket of a flooring element according to a third embodiment of the present invention;
- Figure 9 shows, in perspective and exploded view, a hooking bracket arranged on the fourth fixing side of the flooring element of Figure 1;
- Figure 10 shows, in perspective view, a trolley for assembling, dismantling and handling the flooring elements of the previous Figures.

Detailed description

- Figures 1, 2 show a perspective view and a bottom view respectively, of a flooring element – referred to with the overall reference 1 – for a modular floor according to the present invention. The flooring element 1 comprises a panel element 2 – in the present embodiment made like a rectangular panel of laminated wood – defining: